

Message

**From:** Bahadori, Tina [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=7DA7967DCAFB4C5BBC39C666FEE31EC3-BAHADORI, TINA]  
**Sent:** 10/1/2018 3:37:35 PM  
**To:** Thayer, Kris [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=3ce4ae3f107749c6815f243260df98c3-Thayer, Kri]; Lavoie, Emma [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=86ac7844f12646c095e4e9093a941623-Lavoie, Emma]  
**CC:** Kraft, Andrew [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=4a94a4f199b247778abb02285a51b927-Kraft, Andrew]; Vandenberg, John [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=dcae2b98a04540fb8d099f9d4dead690-Vandenberg, John]; Bussard, David [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=cf26b876393e44f38bdd06db02dbbfe5-Bussard, David]; Glenn, Barbara [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=7a2dc9210d2d4d02a623b33f87f49436-Glenn, Barbara]  
**Subject:** RE: Checking on -- Meeting with ACC on Formaldehyde

Yes, let's scan and attach.  
T.

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**From:** Thayer, Kris  
**Sent:** Monday, October 1, 2018 11:37 AM  
**To:** Lavoie, Emma <Lavoie.Emma@epa.gov>  
**Cc:** Kraft, Andrew <Kraft.Andrew@epa.gov>; Bahadori, Tina <Bahadori.Tina@epa.gov>; Vandenberg, John <Vandenberg.John@epa.gov>; Bussard, David <Bussard.David@epa.gov>; Glenn, Barbara <Glenn.Barbara@epa.gov>  
**Subject:** RE: Checking on -- Meeting with ACC on Formaldehyde

Maybe we should scan?

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**From:** Lavoie, Emma  
**Sent:** Monday, October 1, 2018 11:33 AM  
**To:** Thayer, Kris <thayer.kris@epa.gov>  
**Cc:** Kraft, Andrew <Kraft.Andrew@epa.gov>; Bahadori, Tina <Bahadori.Tina@epa.gov>; Vandenberg, John <Vandenberg.John@epa.gov>; Bussard, David <Bussard.David@epa.gov>; Glenn, Barbara <Glenn.Barbara@epa.gov>  
**Subject:** Re: Checking on -- Meeting with ACC on Formaldehyde

I have a paper copy of a ppt from ACC.

- Emma

On Oct 1, 2018, at 11:21 AM, Thayer, Kris <thayer.kris@epa.gov> wrote:

All I see is this in the invite. Can you share if you have anything else?

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Regul Toxicol Pharmacol. 2017 Nov 17. pii: S0273-2300(17)30363-X. doi: 10.1016/j.yrtph.2017.11.006.  
[Epub ahead of print]

**Six years after the NRC Review of EPA's Draft IRIS Toxicological Review of Formaldehyde: Regulatory implications of new science in evaluating formaldehyde leukemogenicity.**

Mundt KA<sup>1</sup>, Gentry PR<sup>2</sup>, Dell LD<sup>2</sup>, Rodricks JV<sup>2</sup>, Boffetta P<sup>3</sup>.

**Author information**

**Abstract**

Shortly after the International Agency for Research on Cancer (IARC) determined that formaldehyde causes leukemia, the United States Environmental Protection Agency (EPA) released its Draft IRIS Toxicological Review of Formaldehyde, also concluding that formaldehyde causes leukemia. Peer review of the EPA Draft IRIS Assessment by a National Academy of Science committee noted that "causal determinations are not supported by the narrative provided in the draft" {NRC 2011}. They offered recommendations for improving the IRIS review and identified several important research gaps. Over the six years since the NRC peer review, significant new science has been published. We identify and summarize key NRC recommendations and map them to this new science, including extended analysis of epidemiological studies, updates of earlier occupational cohort studies, toxicological experiments using a sensitive mouse strain, mechanistic studies examining the role of exogenous versus endogenous formaldehyde in bone marrow, and several critical reviews. With few exceptions, new findings are consistently negative, and integration of all available evidence challenges the earlier conclusions that formaldehyde causes leukemia. Given formaldehyde's commercial importance, environmental ubiquity and endogenous production, accurate hazard classification and risk evaluation of whether exposure to formaldehyde from occupational, residential and consumer products causes leukemia are critical.

**KEYWORDS:**

Epidemiology; Evidence integration; Hazard evaluation; Mechanistic studies; Regulatory science; Toxicology

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**From:** Kraft, Andrew

**Sent:** Monday, October 1, 2018 10:43 AM

**To:** Thayer, Kris <[thayer.kris@epa.gov](mailto:thayer.kris@epa.gov)>; Bahadori, Tina <[Bahadori.Tina@epa.gov](mailto:Bahadori.Tina@epa.gov)>; Lavoie, Emma <[Lavoie.Emma@epa.gov](mailto:Lavoie.Emma@epa.gov)>; Vandenberg, John <[Vandenberg.John@epa.gov](mailto:Vandenberg.John@epa.gov)>; Bussard, David <[Bussard.David@epa.gov](mailto:Bussard.David@epa.gov)>; Glenn, Barbara <[Glenn.Barbara@epa.gov](mailto:Glenn.Barbara@epa.gov)>

**Subject:** Re: Checking on -- Meeting with ACC on Formaldehyde

I just have the materials that were attached to the meeting invitation.

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**From:** Thayer, Kris

**Sent:** Monday, October 1, 2018 10:39 AM

**To:** Bahadori, Tina; Lavoie, Emma; Vandenberg, John; Bussard, David; Kraft, Andrew; Glenn, Barbara

**Subject:** RE: Checking on -- Meeting with ACC on Formaldehyde

# Deliberative Process / Ex. 5

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**From:** Bahadori, Tina

**Sent:** Monday, October 1, 2018 10:35 AM

**To:** Lavoie, Emma <[Lavoie.Emma@epa.gov](mailto:Lavoie.Emma@epa.gov)>; Vandenberg, John <[Vandenberg.John@epa.gov](mailto:Vandenberg.John@epa.gov)>; Bussard, David <[Bussard.David@epa.gov](mailto:Bussard.David@epa.gov)>; Kraft, Andrew <[Kraft.Andrew@epa.gov](mailto:Kraft.Andrew@epa.gov)>; Glenn, Barbara <[Glenn.Barbara@epa.gov](mailto:Glenn.Barbara@epa.gov)>; Thayer, Kris <[thayer.kris@epa.gov](mailto:thayer.kris@epa.gov)>

**Subject:** RE: Checking on -- Meeting with ACC on Formaldehyde

Got it! Here is the list:

Stephanie Daigle - Celanese  
David Dunlap - Koch Industries, Inc.  
David Fischer - American Chemistry Council  
Charlie Grizzle - The Grizzle Company  
Mark Gruenwald - Hexion, Inc.  
Raj Sharma - Georgia-Pacific  
Jim Sherman - Celanese  
Kimberly White - American Chemistry Council

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**From:** Lavoie, Emma

**Sent:** Monday, October 1, 2018 8:48 AM

**To:** Vandenberg, John <[Vandenberg.John@epa.gov](mailto:Vandenberg.John@epa.gov)>

**Cc:** Bahadori, Tina <[Bahadori.Tina@epa.gov](mailto:Bahadori.Tina@epa.gov)>; Bussard, David <[Bussard.David@epa.gov](mailto:Bussard.David@epa.gov)>; Kraft, Andrew <[Kraft.Andrew@epa.gov](mailto:Kraft.Andrew@epa.gov)>; Glenn, Barbara <[Glenn.Barbara@epa.gov](mailto:Glenn.Barbara@epa.gov)>; Thayer, Kris <[thayer.kris@epa.gov](mailto:thayer.kris@epa.gov)>

**Subject:** Re: Checking on -- Meeting with ACC on Formaldehyde

Lou has my file that contains names of two of the attendees. I expect we could piece a list together based on visual memory.

- Emma

On Oct 1, 2018, at 8:44 AM, Vandenberg, John <[Vandenberg.John@epa.gov](mailto:Vandenberg.John@epa.gov)> wrote:

I looked and don't have any record of attendees. Its on my calendar, but I really don't remember the meeting

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**From:** Bahadori, Tina

**Sent:** Monday, October 01, 2018 7:31 AM

**To:** Bussard, David <[Bussard.David@epa.gov](mailto:Bussard.David@epa.gov)>; Lavoie, Emma <[Lavoie.Emma@epa.gov](mailto:Lavoie.Emma@epa.gov)>; Kraft, Andrew <[Kraft.Andrew@epa.gov](mailto:Kraft.Andrew@epa.gov)>; Glenn, Barbara <[Glenn.Barbara@epa.gov](mailto:Glenn.Barbara@epa.gov)>; Vandenberg, John <[Vandenberg.John@epa.gov](mailto:Vandenberg.John@epa.gov)>

**Cc:** Thayer, Kris <[thayer.kris@epa.gov](mailto:thayer.kris@epa.gov)>

**Subject:** Checking on -- Meeting with ACC on Formaldehyde

Good morning everyone,  
Would any of you by chance know or have a list of who came to this meeting from outside of EPA on January 24<sup>th</sup>? We are trying to update our records.  
Many thanks,  
Tina

-----Original Appointment-----

**From:** Gentry, Nathan **On Behalf Of** Orme-Zavaleta, Jennifer  
**Sent:** Tuesday, January 16, 2018 11:23 AM  
**To:** Orme-Zavaleta, Jennifer; Rodan, Bruce; Yamada, Richard (Yujiro); Fleming, Megan; Christian, Megan; Kuhn, Kevin; Bahadori, Tina  
**Cc:** Vandenberg, John; Thayer, Kris; Lavoie, Emma; Axelrad, Daniel; Ross, Mary; Bussard, David; Mazza, Carl; Sasser, Erika; Rimer, Kelly; Vasu, Amy; Kraft, Andrew; Glenn, Barbara  
**Subject:** Meeting with ACC on Formaldehyde  
**When:** Wednesday, January 24, 2018 2:00 PM-3:00 PM (UTC-05:00) Eastern Time (US & Canada).  
**Where:** 41213 RRB/via video to B249; Teleconference line and teleconference code/ Ex. 6

**From:** White, Kimberly [<mailto:Kimberly.White@americanchemistry.com>]  
**Sent:** Monday, December 04, 2017 8:22 AM  
**To:** Orme-Zavaleta, Jennifer <[Orme-Zavaleta.Jennifer@epa.gov](mailto:Orme-Zavaleta.Jennifer@epa.gov)>  
**Subject:** Follow-up

Dear Dr. Orme-Zavaleta,

Thank you for your initial response to my November 21<sup>st</sup> letter. Do you have availability for a 1 hour meeting in Washington, DC sometime during the week of January 22<sup>nd</sup> to discuss further?

Separately, I also wanted to alert you to a recently published article by Mundt et al. titled "Six years after the NRC Review of EPA's Draft IRIS Toxicological Review of Formaldehyde: Regulatory implications of new science in evaluating formaldehyde leukemogenicity". I have appended a copy of the in press version to this email and excerpted the abstract below.

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Regul Toxicol Pharmacol. 2017 Nov 17. pii: S0273-2300(17)30363-X. doi:

10.1016/j.yrtph.2017.11.006. [Epub ahead of print]

**Six years after the NRC Review of EPA's Draft IRIS Toxicological Review of Formaldehyde: Regulatory implications of new science in evaluating formaldehyde leukemogenicity.**

Mundt KA<sup>1</sup>, Gentry PR<sup>2</sup>, Dell LD<sup>2</sup>, Rodricks JV<sup>2</sup>, Boffetta P<sup>3</sup>.

Author information

Abstract

Shortly after the International Agency for Research on Cancer (IARC) determined that formaldehyde causes leukemia, the United States Environmental Protection Agency (EPA) released its Draft IRIS Toxicological Review of Formaldehyde, also

concluding that formaldehyde causes leukemia. Peer review of the EPA Draft IRIS Assessment by a National Academy of Science committee noted that "causal determinations are not supported by the narrative provided in the draft" {NRC 2011}. They offered recommendations for improving the IRIS review and identified several important research gaps. Over the six years since the NRC peer review, significant new science has been published. We identify and summarize key NRC recommendations and map them to this new science, including extended analysis of epidemiological studies, updates of earlier occupational cohort studies, toxicological experiments using a sensitive mouse strain, mechanistic studies examining the role of exogenous versus endogenous formaldehyde in bone marrow, and several critical reviews. With few exceptions, new findings are consistently negative, and integration of all available evidence challenges the earlier conclusions that formaldehyde causes leukemia. Given formaldehyde's commercial importance, environmental ubiquity and endogenous production, accurate hazard classification and risk evaluation of whether exposure to formaldehyde from occupational, residential and consumer products causes leukemia are critical.

**KEYWORDS:**

Epidemiology; Evidence integration; Hazard evaluation; Mechanistic studies; Regulatory science; Toxicology

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Kind Regards,

Kimberly Wise White, Ph.D. | American Chemistry Council  
Senior Director, Chemical Products & Technology Division  
[Kimberly.White@americanchemistry.com](mailto:Kimberly.White@americanchemistry.com)  
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O: (202) 249-6707 C: (202) 341-7602  
[www.americanchemistry.com](http://www.americanchemistry.com)